

the RARS

Raleigh Amateur Radio Society

Exciter



Worldwide Friendship

April, 2004 Number 396

← BPL BOX

BPL "Repeater" cabinet attached to
power pole near Fuquay-Varina, NC

The Exciter

The *Exciter* is the monthly newsletter of the Raleigh Amateur Radio Society. It is available in both printed and electronic form. The printed version is mailed to members just before each club meeting. The electronic form, in Adobe Acrobat PDF format, is e-mailed about a week earlier.

We solicit both articles and advertising. The deadline for submissions is the day after the monthly meeting. Contact the Editor.

The views contained in the *Exciter* are those of the individual authors and are not necessarily the views of the Editor or the Raleigh Amateur Radio Society.

The Raleigh Amateur Radio Society

The Raleigh Amateur Radio Society, Inc. (RARS) was founded in 1969 and continues to serve and support the Amateur Radio community in the greater Triangle area. In 1999, we incorporated a new RARS, and obtained 501(c)(3) Non-Profit tax status.

The objectives of the club are to promote worldwide friendship through Amateur Radio; to be of public service by providing radio communications in times of disaster, emergency, or civic need; to educate members in radio technique; and to provide training classes to assist in obtaining Amateur Radio licenses.

Anyone interested in Amateur Radio is eligible to apply for membership. Dues for regular licensed amateurs are \$18.00 per year (from July 1 through June 30). Additional immediate family members pay \$5.00 each per year. Dues for licensed amateurs older than 59 or younger than 16 are \$12.00 per year. Dues for non-licensed Associate members are \$9.00 per year.

Applications for membership may be obtained from the treasurer or the RARS web site (www.rars.org).

EXCITER EDITOR: Denyse Walter
KG4CXR
919-468-5358
kg4cxr@nc.rr.com



OFFICERS

PRESIDENT: Andy Peterson NI4S
919-845-6251
ni4s@arrl.net

VICE-PRESIDENT Dick Bitner W8HYD
919-872-6802
ncsol@bellsouth.net

SECRETARY: Virginia Enzor KG4PFA
919-469-8555
kg4pfa@aol.com

TREASURER: Greg Seamster KE4PAX
919-859-0029
ke4pax@arrl.net



RARS Repeaters in Raleigh:
145.13 (82.5 PL)
146.64
224.64
444.525 (82.5 PL)

WEB SITE www.rars.org



PRESIDENT'S COMMENTS:

Despite what the calendar may officially says, it sure feels to me like Spring is here.

The recent doses of mild weather, our March program on weather dynamics, and the onset of March Madness all contribute to the feeling. What else? Of course.. RARSfest! I hope to see everyone out enjoying this year's event.

There's plenty of information this month about the BPL threat. If you've never filed FCC comments before, this is a great time to start. It's very easy to do, and every voice helps. Until next time, 73!

Andy NI 4S

The Exciter goes to the printer the first Monday after the general meeting. Electronic mailing is the same week. Printing and mailing may vary.

Be sure to use the 145.13 repeater with PL tone of 82.5.

RALEIGH AMATEUR RADIO SOCIETY MEETINGS

Date: Every first Tuesday of the Month
Location: Forest Hills Baptist Church, at Dixie Trail and Clark Avenue, in Raleigh
Time: 7:30pm. Folks start showing up a bit before 7 to chat, brag and eat donuts.

VE Testing: The RARS VEs will accept walk-in testing at the February, May, August and November RARS meetings, at the RARSfest in April, the Cary Swapfest in July and the JARSfest in November, and following RARS license classes. Please bring a photo ID and the original copy of your current license, plus any CSCEs you have for credit. Please refer to www.rars.org for more information.

Announcements

NEXT RARS MEETINGS:
April 6, 2004 RARS Birthday Party/Awards
May 4, 2004 Radio Astronomy

RARSfest Dinner April 3 Saturday night

RARS furnishes the pork barbecue, fried chicken, bread, drinks, and paper products. We need for YOU to furnish the side items of vegetable dishes, salads, assorted casseroles, and desserts. If you are trying to decide what you might contribute...let me first encourage vegetables, salads, or casseroles.....BUT, if your specialty is a dessert, by all means do not hesitate to share this with our guests. Even store-bought and prepared items are welcomed!! Please bring your food items by 6:15 to the exhibit hall of the Jim Graham Building in the area just outside the Hospitality Room on the evening of April 3. Someone will be there to direct you to the location. Talk in will be 146.64


RARSfest April 4 Sunday in the Jim Graham Building from 8:00 to 4:00 we hope to see you there. Prizes will be every hour from 10:00-2:00. Forums are also planned.

All licensed hams are invited to participate the Royal Order of the Wouff Hong after the social on Saturday night.

Contact Mary Jo Littlewood K4MJL 872-6555 or K4MJL@earthlink.net

April 17 is the 2004 MS Walk and Pooch Parade. Saturday 7:30-3:00. Location is Imperial Center off Page Road RTP. Hams needed for this event. Please contact Denyse KG4CXR 468-5358 or Marion K1MRB 848-7761 to volunteer

CAROLINA
440
RAGCHEW



444.925 Durham	444.325 Holly Springs
444.375 Henderson	444.150 Clayton
444.775 Cary	444.550 Benson
444.875 Louisburg	443.800 Snow Camp
Monday nights at 7:30pm	441.725 Raleigh "hub"
all PL tones=100.0 Hz	Full time linked repeaters

KD4RAA/K4JDR Repeater Group

RARS MEMBERSHIP DUES

Membership renewals and new membership dues can be paid at RARS meetings, on-line at the RARS website, or mailed to the RARS treasurer. Mail To:

Greg Seamster RARS Treasurer 1405
Leanne Court
Raleigh, NC 27606

RARS now accepts credit card payments online for new members and membership renewals. See the RARS website (www.rars.org) for more information. You can join or renew for 1, 2, or 3 years.

GENERAL MEETING March 2, 2004

The meeting was called to order at 7:15 p.m. by President Andy Peterson, NI4S.

Treasurer's Report: Greg Seamster, KE4PAX reported that there are 264 members and that current RARSFest expenses total \$4151.08.

Announcements:

Dick Orander, KD4ISC requested help with the Odyssey of the Mind Tournament to be held on Saturday, March 13, from 7:30 a.m. until 4:00 p.m. at Wakefield High School in Raleigh. Andy Peterson, NI4S announced volunteers are needed for the combined MS Walk and Pooch Parade on April 17. Interested hams may contact Denyse Walter, KG4CXR or Marian Breyer, K1MRB.

Hank Montgomery, K4HM advertised the upcoming RARSFest on April 4. Hank reviewed committee chairs and requested assistance from members. On line registration is available on the RARS website, and prizes include five 2 meter rigs and one HF rig.



Left John K4JVP & Jeff Orrock



Photos by Denyse KG4CXR

Program: Skywarn EC John Van Pelt, K4JVP introduced Jeff Orrock, meteorologist with the National Weather Service, who presented Advanced Storm Spotter Training. John Van Pelt stated that Skywarn needs Net Control Operators and that volunteers will receive net control and radar training. He also reviewed Skywarn activation procedures.

Door prizes were won by Ashby Spratley, W5PGX; Fred Breidt, AG4WE; Larry Wiandt, N4LEW; Dick Orander, KD4ISC; and Suzanne Naylor, KI4ATA. The meeting was adjourned at 9:40 p.m.

Respectfully submitted, Virginia Enzor, KG4PFA, Secretary

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A Few Good Discussion Groups on the Internet

By Martin Brossman – KI4CFS

As a newer Ham, not only have I gained a lot of support and knowledge from the members of RARS but also on line discussion groups, often called “forums”. One of the challenges of some of the groups was SPAM (unsolicited email). The solution is moderated groups that either keep the stuff out or boot it out, if it gets in. Moderated means that someone is overseeing the group and either screening people when they come in and/or watching what they post. I would like to share a few of my favorite on line discussion groups (forums). Following are the top twelve:

<http://www.eham.net/forums>

Some great forums especially “ask the Elmer” area

<http://groups.yahoo.com/group/IC-706MKIIG/>

A group for people who want to discuss the ICOM IC-706. I started it on January 4, 2004 because the original group was un-moderated. There’s about 143 members so far.

<http://groups.yahoo.com/group/LDG-auto-tuners/>

A group for people who want to discuss the LDG auto-tuner, specifically the Z-100. I started it on Dec 27, 2003, because there was no group for this product. About 73 members so far.

<http://groups.yahoo.com/group/IC-2720/>

A group for people who want to discuss the ICOM IC-2720. I was asked to co-moderate, new members screened also. About 234 members so far.

<http://groups.yahoo.com/group/HamRadioHelpGroup/>

“Beginners to Experts in Ham Radio” with over 700 members & moderated.

<http://www.hamforum.com/>

“Ham Radio Forum”, another discussion group that requires you to “register” to keep the SPAM out.

<http://www.qrz.com/>
then select “all forums”

Most of you know of “qrz.com” for call sign look-up, but it has a quite nice discussion area too!

<http://groups.yahoo.com/group/nc-triangle-ham-radio/>

“The purpose of this group is to promote the open discussion of Amateur Radio, and related topics in and around the Raleigh, Durham and Chapel Hill areas of North Carolina.”

<http://groups.yahoo.com/group/RadioModifications/>

“Radio Modifications is a group dedicated to the repair, maintenance and modification of (amateur) radio related equipment.

<http://groups.yahoo.com/group/TH-F6A/>

A group for people who want to discuss the Kenwood TH-F6. This group is listed last because it is not automatically monitored but the owner of the group does a good job in removing SPAMers when they get in.”

<http://groups.yahoo.com/group/BPLandHamRadio/>

Broadband over Power Line (BPL) poses a significant potential interference problem to amateur radio. This group consists of amateur radio operators that wish to discuss opinions and topics related to amateur radio and broadband over power line (BPL). Your opinion is welcome (please be polite) but constructive feedback about possible solutions is encouraged.

Continued on page 10

BPL Update #2 – FCC Releases NPRM: Time to Complain

By Gary Pearce KN4AQ, Wake County ARES PIO

February 27, 2004. Events are moving quickly on the BPL front. Progress Energy has begun signing up customers for their Phase II trial, and announced two sites that they hadn't told us about. Duke Power has announced that they will run a trial site in Charlotte, and are working with hams in the Mecklenburg ARS. The FCC released their Notice of Proposed Rulemaking (NPRM) for Part 15, the section of the rules that governs BPL as an unlicensed, "unintentional radiator." And Tom N4TAB, Frank W4FAL and I have continued our investigation of the effects of BPL on ham radio, based on the Phase II trial systems. There's still more work to do, but the future is getting clearer.

They've heard us

Amateur Radio's complaints about the potential for interference from BPL have been heard. After months of industry denial that the systems cause interference, and the FCC's apparent deaf ear to our evidence, the situation changed quickly at the Commission's February 12th public meeting when they announced the Part 15 NPRM. The FCC engineering staff and most of the Commissioners commented on the potential for interference and the need to "mitigate" it and protect licensed services (Amateur Radio was mentioned by name only in a news conference that followed the meeting).

(You can see video of the meeting by going to www.fcc.gov/realaudio and selecting the "Commission Meetings" link under "A/V Archives" on the left hand column. Once you're on that page, you'll see a list of "On-Line Recordings." Click on "February 2004 Meeting Video" and you'll start seeing the meeting in streaming video. You'll need a player that can handle the RealVideo format. BPL is the first item on the agenda, and takes about 18 minutes. But you'll also want to slide down to the press conference, 1 hour and 27 minutes into the video, for the first few questions that address Amateur Radio interference directly as well.)

The NPRM

Reflecting the comments at the Commission meeting, the NPRM proposes statements and requirements that appear to insure protection from interference, while also giving strong support to BPL in general. The NPRM's introduction paragraph includes this sentence: "...we are cognizant that the possibility of widespread operation of Access BPL raises interference concerns and that we must protect licensed radio services from any harmful interference that might occur."

Briefly, the NPRM proposes these steps to reduce interference :

- No increase in Part 15 emission limits.
- Affirms that "operations must cease if harmful interference to licensed services is caused."
- Requires "adaptive interference

Progress Energy's BPL system uses wi-fi not the power lines to bring the data into the house. The wi-fi node antenna is disguised in this light pole.



mitigation techniques" – reduce power, change or exclude operating frequencies by remote control.

- "Incorporate a shut-down feature" to quickly terminate interference (no details on how this would work).
- Notification requirements and public database that would show location and frequencies in use for all BPL systems.

Don't Celebrate Yet

This might look good at first blush, but is it enough, and will it work? I have some doubts.

Will it fit? My first question is "will it fit?" Can BPL be implemented in a dense suburban environment, especially one with all overhead power lines? Our observations so far indicate that simple home stations running a dipole antenna can hear BPL from overhead lines at least a half-mile away, and sometimes more. A powerhouse station with a beam on a tower at 70 to 100 feet can hear it at 1.5 miles, maybe more. The system that Progress Energy is using requires 6 MHz of spectrum in two chunks (one 2.5 MHz wide, the other 3.5 MHz wide) for each leg of power line to a maximum of 2000 feet. Then the signals must shift to new frequencies, another 6 MHz of spectrum in two chunks. The original group of frequencies can't be re-used for several legs, a mile away or more.

Overlay these requirements on a suburban area like most of Raleigh or Cary, with several hams per square mile, and see if you can find enough spectrum to fit BPL and keep the ham bands clear for up to a mile for each ham. Make it more difficult for BPL by making it avoid the Shortwave Broadcast bands as well. I haven't done the calculation yet, but I suspect there just won't be enough room for all these 6 MHz chunks without sitting on some ham or swl bands. The Phase II trial sites occupy all of the 12 and 10 meter bands with their overhead lines now.

Domino effect. In this same dense suburban area, what happens when one ham complains about interference and the utility moves the BPL signals on the power lines causing the problem? If spectrum is as tight as I expect, moving one spectrum block on one power line leg will sometimes require moving the spectrum used on the next leg, or the 2nd adjacent leg. The result could be that a ham a mile away will suddenly find interference on a band that had been clear.

What about mobile? Assume that the BPL provider can create clear spectrum for all the hams at home. What happens to mobile HF operators? If BPL is operating across ham bands in any areas, there is a chance that a mobile ham will drive along one of the power lines and receive interference that could cover a half-mile, right under the line. That's a minute's worth of interference at 30 mph, if the ham is just driving through. But if he stops in a parking lot or friend's driveway, the interference is constant at that point. Are we to yield our spectrum even for a minute under these circumstances?

What's "harmful?" The FCC rules define harmful interference as:

§97.3(a)

(23) Harmful interference. Interference which endangers the functioning of a radionavigation service or of other safety services or seriously degrades, obstructs or repeatedly, (Continued on page 8)

LOOKing Back 30 Years

Taken from the April 1974 Exciter

The Raleigh Amateur Radio society members voted to affiliate with The Radio Amateur Satellite Corporation (AMSAT).

The FCC has proposed to limit CB'ers to 20 watts.

Congratulations to the Durham FM Association on their new repeater license, WR4AGC they waited 11 months for the FCC to act. The word is out that K4ITL is trying to be "most patient."



Taken from the April 1994 Exciter

RARSfest at the Jim Graham Building at the NC State Fairgrounds will be on Sunday April 17th. This will be the 22nd Annual edition of the Raleigh Amateur Radio Society Hamfest and computer fair.

At 9:30pm the induction ceremony for the Royal Order of the Wouff Hong will be held. This awe-inspiring rite is open to all licensed amateurs.

Membership is 377. Gary KN4AQ describes the NEW idea on how to use BBS (Bulletin Board Service and a new way to send messages with Blue Wave or OLX (Offline Express).

RARS NEW MEMBERS

January/February 2004

We would like to welcome our new members to RARS. Thank you for considering us for your amateur radio club.

Rod KI4DCN

Robert KG4VKQ

Skip N6LUZ

146.88 145.39, 147.105, & 147.135 Repeaters are supported by PCRN if you would like to donate please make checks to:

**PCRN
PO Box 12734
Raleigh, NC 27605**

**More info on PCRN:
www.pcrn.net**

NET REPORTS FOR FEBRUARY 2004

8:00PM DAILY: RARS Evening Net

Participants 358

Traffic 16/11

Time 675 minutes

Sessions 29

8:30PM SAT: Tech & Traders Net

9:00PM MON: SWL/SIG

Participants 43

Traffic 0/0

Time 331 Minutes

Sessions 7

interrupts a radiocommunication service operating in accordance with the Radio Regulations.

How does that relate to Amateur Radio? With some difficulty. On HF, hams tune across the bands looking for signals – often looking for weak signals from other hams in distant lands. The Progress Energy BPL signal appears as a series of closely spaced carriers, completely filling the 2.5 and 3.5 MHz spectrum blocks they occupy, about one every kHz. Even if the BPL signal is weak, not even moving the S-meter, that series of carriers will make tuning the band a major irritation, and picking out weak DX or domestic signals difficult.

It doesn't take interference to actual two-way communication to be harmful. Much of Amateur radio, and our entire sibling avocation of shortwave listening, is just that – listening. If something makes it difficult to just listen, it is harmful.

Does anyone outside ham radio understand this? Where will the FCC draw the line for “harmful” interference?

Amateur Radio by “Customer Service.” What we're seeing here is a change from a mostly proactive prohibition of interference sources in the ham bands to a widespread permission to create an interference situation that forces the hams to react and complain in order to reclaim clear spectrum. A ham who suddenly finds one or more bands filled with carriers must now deal with a utility's Customer Service. How responsive will they be? Will it take 10 minutes to make a change? 10 hours? 10 days? Progress Energy's Customer Service phone line is currently open from 7 AM to 9 PM. What happens when you're trying to operate in the middle of the night?

Their system will be remotely controlled – they won't need to send a lineman out to tweak the box on the pole. But will they want to send someone out to confirm the problem before making a change? Will they understand that moving the BPL signals from 20 meters to 40 meters isn't an improvement?

Are there any penalties for failing to promptly mitigate interference? For reinstating interference that was once cleared up?

Insult to injury. This is paragraph 35 from the NPRM:

35. We recognize that amateur operations are likely to present a difficult challenge in the deployment of Access BPL in cases where amateurs use high gain outdoor antennas that are located near power lines. In considering this interference potential, we note that ARRL acknowledges that noise from power lines, absent any Access BPL signals, already presents a significant problem for amateur communications. We therefore would expect that, in practice, many amateurs already orient their antennas to minimize the reception of emissions from nearby electric power lines. Further, we note that many Access BPL technologies have the capability to avoid using specific frequencies, if necessary, to avoid surprised if they did – the signal is much weaker. But it's quite likely that they would present a problem to hams in the immediate neighborhood, if there were any.

These hams were generally aware of BPL, but did not know they were near a trial site, since the locations were kept secret until recently. One of them had heard the 10 meter signals, but didn't know what it was or who to complain to. Progress Energy asked us not to divulge the location of the trials, out of respect to the people who lived there, but it is now public record. Those of us involved in the investigation – W4FAL, N4TAB and me – had not submitted complaints. Perhaps we should have. I did call in a complaint on a Tuesday in February, but the signals were still there on Thursday.

Complain now!

If you have heard signals from the BPL trial sites, whether from home or while mobile, it's time to complain. We need to stop the allegations that there have been no complaints from hams. These signals are in our bands. They interfere with our operation.

By the time you read this, the spectrum used for the two

trial overhead segments may have been moved. Tune across the HF spectrum, from as low as 6 MHz to 30 MHz or above. There are a lot of signals across HF, but the “signature” of the Progress Energy BPL signal is easy to recognize, even when it's weak. It is literally continuous carriers, all about the same strength, for 2.5 or 3.5 MHz of spectrum. A shortwave broadcast band, or CB, can sound something like BPL, but they aren't nearly as wide and the signals vary greatly in strength.

To complain, call Progress Energy at 1-800-452-2777. Option 0 (zero) takes you to a human operator. Make a record of your complaint, noting the date and time, and the name of the operator you talk to. Be civil. The operator didn't put up the equipment, and probably has little idea of what you're talking about.

In addition to the telephone complaint, write it up and send it to several sources:

Federal Communications Commission
James R. Burtle
Chief, Experimental Licensing Branch
Telephone: 202 418-2445
E-mail: jburtle@fcc.gov

Federal Communications Commission
David H. Solomon
Chief, Enforcement Bureau
Telephone: 202 418-7450
E-mail: dsolomon@fcc.gov

Riley Hollingsworth, Special Counsel
Technical and Public Safety Division, Enforcement Bureau,
FCC (Gettysburg, PA), telephone 717 338-2502,
Email rholling@fcc.gov

The ARRL RFI desk at w1rfi@arrrl.org

And to NC ARRL Technical Information Specialist Frank Lynch W4FAL:
w4fal@smithchart.org

Conclusion

In my last article, I said that it's too soon to draw conclusions. I'm ready to draw some now.

Hams have put up with and frequently solved problems with interference in our bands for decades. We've had traditional power-line noise since the beginning of radio. The advent of the computer and processor-based electronics, with their clocks and oscillators creating point-source carriers and other hash has increased the problem dramatically over the past decade. But these problems pale in comparison to BPL.

BPL literally invites the radiation of RF across wide swaths of the HF and low VHF spectrum. And while the signals will be very low power, they can be heard more than a mile away by a good HF Amateur Radio station, and a half-mile easily by an average one. Their wide proliferation, if BPL becomes popular, could overwhelm any attempts to “mitigate” the resulting interference.

This is somewhat theoretical, with the experience of very limited trials in rural areas being extrapolated to dense cities and suburbs. By the time it is proven in practice, it will be too late. So much money will be involved, and so many people affected, that the promise of “it must be shut down” would be
(Continued on page 9)

difficult to enforce. Getting relief could be a major headache for individual hams, if relief is available at all.

The FCC may believe that the mitigation factors in the NPRM are adequate. I do not. Nor do I believe that the FCC will hold BPL operators to the promise of “shut it down” if we complain about interference.

What to do?

If you are "fortunate" enough to be near a trial area, listen for the signal. If you hear it on a ham band, a short-wave broadcast band, or anyplace else you want to receive a signal, **complain**. If it moves, **complain again**.

If you have HF mobile, visit one or more of the trial sites. If you hear interference to anything you want to receive, **complain**.

Read the NPRM, and then file comments with the FCC. You don't have to be hearing BPL signals to file comments. You can download the NPRM from the FCC web site, and there are links to it from the ARRL web site. Instructions on filing comments are at the end of the NPRM document. (You might wait until the ARRL files comments and take your cue on what to say from that, but the material in this article should give you some ammunition as well).

The address to download the file in MS Word is:

http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-04-29A1.doc

if you prefer Adobe Acrobat format, the address is:

http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-04-29A1.pdf

Many hams have suggested writing their legislators and utility regulators. If you do that, keep it short – they don't want a lot of detail. Distil the main points of this article in your own words. You don't have to be a flowery writer.

If you have contacts in the press, talk to them, or direct your local PIO to your source.

You can also write to Progress Energy. If there is any hope of convincing them not to implement BPL, it is in making them realize that this will just be a nightmare of administration because of all the complaints they will have to address. Assure them that you will listen for BPL, and if it causes you any problems you will complain.

TAKE THE TIME.

There is a big bandwagon of support behind BPL. The FCC favors it. The press likes it. The public will appreciate a new avenue of broadband, especially if it comes with a lower price tag. There is little standing in the way but us.

BPL "repeater" equipment for underground legs is mounted in above-ground pedestals. The RF signal is strongest near these pedestals



Minutes of the RARS Board Meeting January 20, 2004

The RARS board meeting was held at Forest Hills Baptist Church on Tuesday, January 20, 2004. Members present were KN4AQ, K4HF, K4HM, W8HYD, W4NOT, KG4OQA, KE4PAX, KG4PFA, K1RCB, KG4RMT, and NI4S.

The meeting was called to order by NI4S at 7:30 p.m.

On motion by W8HYD and seconded by K1RCB, the minutes of the November 2003 board meeting were approved.

Officers' Reports

Treasurer's Report (KE4PAX): No Report

Vice President's Report (W8HYD):

Upcoming programs: February – "Wallpaper and Awards" by AC4ZO-March – "Lightning" by the NWS (The meeting will start at 7:15pm.)

April – RARS Birthday Party

April 4, 2004 – RARS Hamfest

Committee Reports

FM Committee (KA2FWC): In absence of KA2FWC, KN4AQ reported that the 145.130 repeater on the D.H. Hill library is on the air and working well.

Exciter (KG4CXR): No Report

Net Manager (KG4OQA): Everything is going well with the net. KN4AQ mentioned that net controllers could use the call sign W4DW if they desired. If anyone is interested in being a net controller, they should contact KG4OQA. The club is looking for someone to do the ARRL news hour. KN4AQ will host it until someone is found.

Web Master (W4NOT): W4NOT is looking at a plan for automating the calendar.

Membership (KG4CXR): No Report

Hamfest (K4HM): Flyers will go to the printer shortly. Online ordering of tickets is in place.

KA2FWC will set up a test station next to the RARS table. Radios will be given as prizes. A raffle will be added this year to draw more people to the Hamfest.

Field Day (N4HAF): No Report

Public Information (KN4AQ): N4TAB, W4FAL, and KN4AQ looked at Phase 2 testing of BPL by Progress Energy.

Education (K4RLC): In absence of K4RLC, W8HYD reported that the General class is going well and will finish in 5 sessions. W8HYD would like to continue offering the Technician and General classes on a regular basis.

K4HF reported that \$16.00 was spent from the education budget for a roll-around cart for classes.

VE Team (WA4GIR / KO4CK): The VE team will test at the February RARS meeting.

Public Service (K1RCB): A representative of CCHH has asked RARS to coordinate a public service event, the Raleigh Marathon with tentative date of March 28, 2004. The MS Walk will be April 17, 2004.

ARRL Liaison (K4HF): See the ARRL website for proposed licensing restructuring.

Nominating Committee (K4HF): No Report

W4DW/W4RNC Trustee – (AC4ZO): No Report

At Large Director: No Report

Special or Ad Hoc Committees: No Report

Unfinished Business

HF Remote Business (NI4S): KG4FIJ will work with W0UCE on the HF Remote project. They will look at where to site the system.

Credit Union Report (KE4PAX): KE4PAX will gather information from Morgan Stanley and other institutions on investments. He will look at the possibility of establishing a committee to provide an investment policy statement.

Financial reviews are scheduled for January and July. K4HM and W4NOT will conduct the January financial review with KE4PAX..

New Business

Life members: W8HYD will look into recommending additional candidates for life membership.

On motion by K1RCB the meeting was adjourned at approximately 9:05 p.m.

Respectfully submitted,
Virginia Enzor, KG4PFA

(Continued from page 5 Ham Discussions)

If you want to see an example of an on-line group posting, maybe even contribute something to it, check out my posting called: **“What works in getting your partner to become a ham”**

At: <http://www.eham.net/forums/Elmers/54576>

A few tips when joining a group like this. Make sure the group is moderated in some way. You may want to use a free email address for signing up like Yahoo.com free email. In case SPAM becomes a problem you can just cancel it. Don't be one of those hams that says they just monitor a lot but don't talk, what fun is that!! Come out and play with us! Hope to see your posting in one of the groups!

Of course the opinions are MINE and do not necessarily represent RARS.
Be well, KI4CFS Martin Brossman, KI4CFS@toinquire.com (919) 847-4757



Hard at listening; left to right, Rod KI4DCN, John KG4SWI, (top of head) Jeff AC4ZO, Jim KI4BZB, Denyse KG4CXR and Mike KC4WUH

Code for the
General Class

The General License is in two parts, written and code. Jeff AC4ZO is teaching code several nights a week for those that pastsed the written part of the test. The goal is to test at RARfest on April 4.

Photos by Bobbie KD4ZVW



Break from code: Left to right: Jeff AC4ZO (teacher), Jim KI4BZ, Denyse KG4CXR, Mike KC4WUH, Rod KI4DCN, John KG4SWI

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relax; **docu**source it.



The Central Carolina Skywarn Net Meets

Remember to give damage reports **AFTER** the storms as well as **DURING** the storms.

SKYWARN DINNER:

The next Skywarn dinner will be March 28, at 6:30 El Rodeo Mexican Restaurant in Raleigh, 4112 Pleasant Valley Road, just off Glenwood Ave.

The dinner for February was held at the Wake Forest China Buffet. We discussed a RADAR class for the net control operators, and the upcoming basic class to be held at the Red Cross Center in Cary on Tuesday April 13 at 7:00. You don't have to be a ham to go to the basic spotters training class.



Photo by Jim KG4FIJ

Selene KG4RMT, Hank K4HM, David KF4VXJ, Rick AJ9F, Steve KJ4BX, Lillian KC4AYH, Bob WX4MMM, John K4JVP, Denyse KG4CXR



DID YOU KNOW.....

There is a dinner once a month, known as the RARS Dinner, where hams and non-hams get together to eat, socialize and become better acquainted.

Are you looking for a ham-related activity that your spouse, date, or family can participate in, even if they don't want to be an amateur radio operator? This is it. Do you want to meet interesting, likeable people in a nice environment? This is for you.

Come join us on the 4th Tuesday of each month. We are currently meeting in the private dining room at the Golden Corral, 6129 Glenwood Avenue. People start arriving around 6:30 P.M., and things usually wind down by 8 P.M. or so. You can come whenever it's convenient for you. This gathering is open to anyone, RARS and non-RARS members, adults and children alike. Hope to see you there.

HAMFEST CALENDAR

APRIL 4	RALEIGH, NC
April 17	Morganton, NC
May 14-16	DAYTON, OH
May 15	Williamston, NC
May 29	Durham, NC
June 5	Winston-Salem, NC
June 26-27	FIELD DAY
July 3	Salisbury, NC
July 17	Cary, NC
July 31	Roanoke, VA
July 31	Waynesville, NC



Courtesy of the SERA Repeater Journal

FROSTFEST IN VIRGINIA



FROSTFEST IN VIRGINIA

Two RARS members at the Frostfest in Virginia held in February may be discussing what brand of radio is the best. Chuck K4HF and Hank K4HM. We'll have to find out who won the discussion.

Photo by Gary KN4AQ